

C. Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station antenna (end)

Items in Appendix	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article S9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article S9	Notification or coordination of a GSO network (including Appendix S30B)	Notification or coordination of a non-geostationary-satellite network	Notification or coordination of an earth station	Notice for space stations in the BSS under Appendix S30	Notice for feeder-link stations under Appendix S30A	Notice for stations in the FSS under Appendix S30B	Items in Appendix	Radio-astronomy
C 9 a			O	C	C					C 9 a	
C 9 b							X	X		C 9 b	
C 9 c			X		X					C 9 c	
C 10 a			X	X	X					C 10 a	
C 10 b			X	X	X			X		C 10 b	
C 10 c 1			X	X	X			X	X	C 10 c 1	
C 10 c 2			X	X	X			X	X	C 10 c 2	
C 10 c 3			O	X	X			X	X	C 10 c 3	
C 10 c 4			X	X	X			X	X	C 10 c 4	
C 10 c 5			X	X	X				X	C 10 c 5	
C 10 c 6								X		C 10 c 6	
C 11 a	X ⁽¹⁾	X ⁽¹⁾	X	X	X					C 11 a	
C 11 b								X		C 11 b	
C 11 c							X		X	C 11 c	
C 11 d					X					C 11 d	
C 12									X	C 12	
C 13										C 13	X
C 14							X			C 14	

X Mandatory information

O Optional information

C This information need only be furnished when it has been used as a basis to effect coordination with another administration

⁽¹⁾ Only the list of country or geographic designators or a narrative description of the service area shall be supplied

D. Overall Link Characteristics

Items in Appendix	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article S9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article S9	Notification or coordination of a GSO network (including Appendix S30B)	Notification or coordination of a non-geostationary-satellite network	Notification or coordination of an earth station	Notice for space stations in the BSS under Appendix S30	Notice for feeder-link stations under Appendix S30A	Notice for stations in the FSS under Appendix S30B	Items in Appendix	Radio-astronomy
D 1				X						D 1	
D 2 a				X						D 2 a	
D 2 b				X						D 2 b	

X Mandatory information

O Optional information

C This information need only be furnished when it has been used as a basis to effect coordination with another administration

* The application of this column is suspended pending the decision of WRC-99.

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APPENDIX S5

Identification of Administrations with Which Coordination Is to Be Effected or Agreement Sought Under the Provisions of Article S9

- NOC** 1. For the purpose of effecting coordination under Article S9, except in the case under No. S9.21, and for identifying the administrations with which coordination is to be effected, the frequency assignments to be taken into account are those in the same frequency band as the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights or a higher category¹ of allocation, which might affect or be affected, as appropriate, and which are:
- a) in conformity with No. S11.31³; and
 - b) either recorded in the Master Register with a favourable finding with respect to No. S11.32; or
 - c) recorded in the Master Register with an unfavourable finding with respect to No. S11.32 and a favourable finding with respect to No. S11.32A or No. S11.33, as appropriate; or
 - d) coordinated under the provisions of Article S9; or
- MOD** e) included in the coordination procedure with effect from the date of receipt³ by the Bureau, in accordance with No. S9.34, of those characteristics specified in Appendix S4 as mandatory or required, or from the date of dispatch, in accordance with No. S9.29, of the appropriate information listed in Appendix S4; or
- ADD** *ebis*) where appropriate, in conformity with a world or regional allotment or assignment plan and the associated provisions;
- MOD** f) for terrestrial radiocommunication stations or earth stations operating in the opposite direction of transmission⁴ and, in addition, operating in accordance with these Regulations, or to be so operated prior to the date of bringing the earth station assignment into service, or within the next three years from the date of dispatch of coordination data under No. S9.29, whichever is the longer, or from the date of the publication referred to in No. S9.38, as appropriate.

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2. For the application of No. S9.21, the agreement of an administration may be required with respect to the frequency assignments in the same frequency band as the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights or a higher category of allocation, which may affect or be affected, as appropriate, and:

- a) in cases involving a station in a space radiocommunication service with respect to any other station or involving a terrestrial radiocommunication station with respect to an earth station:
 - i) which are in conformity with No. S11.31, and comply with the relevant conditions listed in Section 1, paragraphs b) to f); or
 - ii) for which the procedure under No. S9.21 has been initiated, with effect from the date of receipt by the Bureau, in accordance with No. S9.34, of the basic characteristics specified in Appendix S4;

or

- b) for terrestrial radiocommunication stations operating in accordance with these Regulations, or to be so operated prior to the date of bringing the other terrestrial station assignment into service, or within the next three months, whichever is the longer;

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3. For each of the frequency assignments to a station of a terrestrial or space radiocommunication service referred to in paragraphs 1 and 2 above, the level of interference shall be determined using the method referred to in Table S5-1 which is appropriate to the particular case.

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4. The assignment is considered to affect or be affected, as appropriate, and coordination must be sought under the procedure of Article S9, if:

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- a) the threshold levels given in Table S5-1 are exceeded; and
- b) the condition specified in Table S5-1 is applicable.

5. Threshold values to determine whether coordination under No. S9.11A is required are given in Table S5-2.

6. No coordination is required:

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a) when the use of a new frequency assignment will not cause or suffer, as appropriate, in respect of any service of another administration, an increase in the level of interference above the threshold calculated in accordance with the method referred to in Tables S5-1 and S5-2; or

NOC

b) to g)

TABLE S5-1
Technical conditions for coordination
(see Article S9)

MOD	Reference of Article S9	Case	Frequency bands (and Region) of the service for which coordination is sought	Threshold/Condition	Calculation method	Remarks
MOD	No. S9.7 GSO/GSO	A station in a satellite network using the geostationary-satellite orbit, in any space radiocommunication service, in a frequency band and in a Region where this service is not subject to a plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission	Any frequency band allocated to a space service, where this service is not subject to a plan	Value of $\Delta T/T$ exceeds 6%	Appendix S8	

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<p>No. S9.8 GSO/GSO</p>	<p>A transmitting space station of the fixed-satellite service (FSS) using the geostationary-satellite orbit in a frequency band shared with the BSS on an equal primary basis, in respect of space stations of the latter service which are subject to the Plans in Appendix S30</p>	<p>11.7 - 12.2 GHz (R2) 12.2 - 12.7 GHz (R3) 12.5 - 12.7 GHz (R1)</p>	<p>i) There is an overlap in the necessary bandwidths of the space stations of FSS and BSS; and</p> <p>ii) the power flux-density (pfd) of the space station of the FSS exceeds the value given in Annex 4 of Appendix S30 on the territory of another administration located in another Region</p>	<p>Check by using the assigned frequencies and bandwidths;</p>	<p>See also Article 7 of Appendix S30.</p> <p>Application of this provision with respect to Articles 6 and 7 of Appendices S30 and S30A is suspended pending the decision of the 1999 World Radiocommunication Conference on the revision of these two Appendices.</p>
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<p>No. S9.9 GSO/GSO</p>	<p>A station of the FSS in a frequency band shared on an equal primary basis with the feeder links of the BSS, which are subject to the Plans in Appendix S30A</p>	<p>17.7 - 18.1 GHz (R1) 17.7 - 18.1 GHz (R3) 17.7 - 17.8 GHz (R2)</p>	<p>i) Value of $\Delta T_s/T_s$ exceeds 4% (see Section I of Annex 4 of Appendix S30A); and ii) geocentric inter-satellite angular separation is less than 3° or greater than 150°</p>	<p>i) Case II of Appendix S8 ii) Annex I of Appendix S8</p>	<p>The threshold/conditions do not apply when the geocentric angular separation, between a transmitting space station in the fixed-satellite service and a receiving space station in the feeder-link plan, exceeds 150° of arc and the free-space power flux-density of the transmitting space station in the fixed-satellite service does not exceed a value of -137 dB (W/m²/MHz) on the surface of the Earth at the equatorial limb.</p> <p>Application of this provision with respect to Articles 6 and 7 of Appendices S30 and S30A is suspended pending the decision of the 1999 World Radiocommunication Conference on the revision of these two Appendices.</p>
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MOD	No. S9.11 GSO/terrestrial	A space station in the broadcasting-satellite service in any band shared on an equal primary basis with terrestrial services and where the broadcasting-satellite service is not subject to a plan, in respect of terrestrial services	620 - 790 MHz 1 452 - 1 492 MHz 2 310 - 2 360 MHz 2 520 - 2 655 MHz 2 655 - 2 670 MHz 12.5 - 12.75 GHz (R3) 17.7 - 17.8 GHz (R2) 21.4 - 22 GHz (R1, R3) 40.5 - 42.5 GHz 84 - 86 GHz	Condition: Bandwidths overlap	Check by using the assigned frequencies and bandwidths	
MOD	No. S9.12 1) Non-GSO/ Non-GSO	A station in a satellite network using a non-geostationary-satellite orbit in the frequency bands for which a footnote refers to No. S9.11A in respect of any other satellite network using a non-geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission	See Table S5-2	Condition: Bandwidths overlap	Check by using the assigned frequencies and bandwidths	
MOD	No. S9.12 2) Non-GSO/GSO	A station in a satellite network using a non-geostationary-satellite orbit in the frequency bands for which a footnote refers to No. S9.11A in respect of any other satellite network using the geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission	See Table S5-2	Condition: Bandwidths overlap	Check by using the assigned frequencies and bandwidths	

(MOD)	No. S9.13 GSO/Non-GSO	A station in a satellite network using the geostationary-satellite orbit in the frequency bands for which a footnote refers to No. S9.11A in respect of any other satellite network using a non-geostationary-satellite orbit, with the exception of coordination between earth stations operating in the opposite direction of transmission	See Table S5-2	Condition: Bandwidths overlap	Check by using the assigned frequencies and bandwidths	
MOD	No. S9.14 Non-GSO/terrestrial, GSO/terrestrial	For a space station in a satellite network in the frequency bands for which a footnote refers to No. S9.11A in respect of stations of terrestrial services where threshold(s) is (are) exceeded	See Table S5-2	See Section 1 of Annex 1	See Section 1 of Annex 1	
(MOD)	No. S9.15 Non-GSO/terrestrial	A specific earth station or a typical earth station in respect of terrestrial stations in frequency bands for which a footnote refers to No. S9.11A allocated with equal rights to space and terrestrial services, where the coordination area of the earth station includes the territory of another country	See Table S5-2	The coordination area of the earth station covers the territory of another administration	See Section 2 of Annex 1	

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No. S9.16 terrestrial/ non-GSO	A transmitting station of a terrestrial service within the coordination area of an earth station in a non-geostationary-satellite network in frequency bands for which a footnote refers to No. S9.11A	See Table S5-2	Transmitting terrestrial station is situated within the coordination area of a receiving earth station	See Section 2 of Annex 1	The coordination area of the affected earth station has already been determined using the calculation method of No. S9.15
MOD No. S9.17 GSO, non-GSO/ terrestrial	A specific earth station or a typical mobile earth station in frequency bands above 1 GHz allocated with equal rights to space and terrestrial services in respect of terrestrial stations, where the coordination area of the earth station includes the territory of another country with the exception of the coordination under No. S9.15	Any frequency band allocated to a space service, except those mentioned in the Plans of Appendix S30A	The coordination area of the earth station covers the territory of another administration	Appendix S7 (For earth stations in the radiodetermination-satellite service (RDSS) in the bands 1 610 - 1 626.5, 2 483.5 - 2 500 and 2 500 - 2 516.5 MHz, see Remarks column) 1) The coordination area of aircraft earth stations is determined by increasing the service area by 1 000 km with respect to the aeronautical mobile service (terrestrial) or 500 km with respect to terrestrial services other than the aeronautical mobile service.	NOTE - For RDSS earth stations, a uniform coordination distance of 400 km corresponding to an airborne earth station shall be used. In cases where the earth stations are all ground-based, a coordination distance of 100 km shall be used.

No. S9.17 GSO, non-GSO/ terrestrial (cont.)				2) For receiving earth stations in the meteorological-satellite service in frequency bands shared with the meteorological aids service, the coordination distance is considered to be the visibility distance as a function of the earth station horizon elevation angle for a radiosonde at an altitude of 20 km above mean sea level, assuming 4/3 Earth radius.	Application of this provision with respect to Articles 6 and 7 of Appendices S30 and S30A is suspended pending the decision of the 1999 World Radiocommunication Conference on the revision of these two Appendices.
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No. S9.17A GSO, non-GSO/ GSO, non-GSO	A specific earth station in respect of other earth stations operating in the opposite direction of transmission in frequency bands allocated with equal rights to space radiocommunication services in both directions of transmission where the coordination area of the earth station includes the territory of another country or the earth station is located within the coordination area of a coordinated earth station, with the exception of the frequency bands subject to the Plans in Appendix S30A	Any frequency band allocated to a space service	The coordination area of the earth station covers the territory of another administration or the earth station is located within the coordination area of an earth station	i) For bands in Table S5-2, see Section 2 of Annex 1 ii) See Recommendations ITU-R IS.847, IS.848 and IS.849	
No. S9.18 terrestrial/GSO, non-GSO	Any transmitting station of a terrestrial service in the bands mentioned in No. S9.17 within the coordination area of an earth station, in respect of this earth station with the exception of the coordination under Nos. S9.16 and S9.19	Any frequency band allocated to a space service.	Transmitting terrestrial station is situated within the coordination area of a receiving earth station	See remarks	The coordination area of the affected earth station has already been determined using the calculation method of No. S9.17

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No. S9.19 terrestrial/GSO	A transmitting station of a terrestrial service in a frequency band shared on an equal primary basis with the BSS, except where the service is subject to the Plans in Appendix S30	Bands listed in No. S9.11	i) Necessary bandwidths overlap; and ii) the pfd of the terrestrial station at the edge of the broadcasting-satellite service service area exceeds the permissible level	i) Check by using the assigned frequencies and bandwidths	
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ANNEX 1 TO APPENDIX S5 (Rev.WRC-97)

NOC 1

MOD 1.1 *Below 1 GHz**

ADD 1.1.1 In the bands 137 - 138 MHz and 400.15 - 401 MHz, coordination of a space station of the mobile-satellite service (space-to-Earth) with respect to terrestrial services (except aeronautical mobile (OR) service networks operated by the administrations listed in numbers S5.204 and S5.206 as of 1 November 1996) is required only if the power flux-density produced by this space station exceeds -125 dB (W/m²/4 kHz) at the Earth's surface.

ADD 1.1.2 In the band 137 - 138 MHz, coordination of a space station of the mobile-satellite service (space-to-Earth) with respect to the aeronautical mobile (OR) service is required only if the power flux-density produced by this space station at the Earth's surface exceeds:

- -125 dB (W/m²/4 kHz) for networks for which complete Appendix 3 coordination information has been received by the Bureau prior to 1 November 1996.
- -140 dB (W/m²/4 kHz) for networks for which complete Appendix 3/Appendix S4 coordination information has been received by the Bureau after 1 November 1996 for the administrations referred to in 1.1.1 above.

ADD 1.1.3 In the band 137 - 138 MHz, coordination is also required for a space station on a replacement satellite of a mobile-satellite service network for which complete Appendix 3 coordination information has been received by the Bureau prior to 1 November 1996 and the power flux-density exceeds -125 dB (W/m²/4 kHz) at the Earth's surface for the administrations referred to in 1.1.1 above.

NOC 1.2
to
1.2.2.2

MOD 1.2.2.2.1 Characteristics of reference digital point-to-point systems

Three different digital systems are described in the following table:

* These provisions apply only to the mobile-satellite service.

- 64 kbit/s capacity used, for example, for outside plant (individual subscriber connection);
- 2 Mbit/s capacity used, for example, for business subscriber connections for the local part of the inside plant;
- 45 Mbit/s capacity used, for example, for trunk networks.

Capacity	64 kbit/s	2 Mbit/s	45 Mbit/s
Modulation	4-PSK	8-PSK	64-QAM
Antenna gain (dB)	33	33	33
Transmit power (dBW)	7	7	1
Feeder/multiplexer loss (dB)	2	2	2
e.i.r.p. (dBW)	38	38	32
Receiver IF bandwidth (MHz)	0.032	0.7	10
Receiver noise figure (dB)	4	4.5	4
Receiver input level for a BER of 10^{-3} (dBW)	-137	-120	-106

Antenna pattern:

$$G(\varphi) = G_{\max} - 2.5 \times 10^{-3} \left(\frac{D\varphi}{\lambda} \right)^2 \quad \text{for } 0 < \varphi < \varphi_m$$

$$G(\varphi) = 39 - 5 \log(D/\lambda) - 25 \log \varphi \quad \text{for } \varphi_m \leq \varphi < 48^\circ$$

$$G(\varphi) = -3 - 5 \log(D/\lambda) \quad \text{for } 48^\circ \leq \varphi \leq 180^\circ$$

where:

$G(\varphi)$: gain relative to an isotropic antenna (dBi)

φ : off-axis angle (degree)

D : antenna diameter

λ : wavelength expressed in the same unit as D

G_1 : gain of the first side-lobe = $2 + 15 \log(D/\lambda)$

(D/λ) may be estimated from $20 \log D/\lambda \approx G_{\max} - 7.7$

G_{\max} : main lobe antenna gain (dBi)

$$\varphi_m = 20 (\lambda/D) \times \sqrt{(G_{\max} - G_1)} \text{ (degrees)}$$

It should be noted that the above antenna radiation pattern corresponds to the average side-lobe pattern and it is recognized that individual side-lobes may exceed it by up to 3 dB.

MOD 1.2.2.2.2 Characteristics of reference analogue point-to-point systems

Reference circuit	12 hops with 50 km distance between stations
Antenna gain (dBi)	33
e.i.r.p. (dBW)	36
Feeder/multiplexer loss (dB)	3
Receiver noise figure (referred to input of receiver) (dB)	8
Maximum short- and long-term interference in the reference circuit	
• baseband interfering signal power level not to be exceeded for more than 20% of the time	240 pW0p
• baseband interfering signal power level not to be exceeded for more than 0.01% of the time	50 000 pW0p

Antenna pattern: Use antenna pattern of section 1.2.2.2.1.

MOD 1.2.2.2.3 Characteristics of reference point-to-multipoint systems

NOTE - In application of the standard computation program (SCP), the use of the point-to-multipoint reference FS system parameters for the 2 170 - 2 200 MHz band is not required.

Parameter	Central station	Outstation
Antenna type	Omni/Sectoral	Dish/Horn
Antenna gain (dBi)	10/13	20 (analogue) 27 (digital)
e.i.r.p. (max) (dBW)		
analogue	12	21
digital	24	34
Noise figure (dB)	3.5	3.5
Feeder/multiplexer loss (dB)	2	2
IF bandwidth (MHz)	3.5	3.5

Antenna pattern:

For the outstation antenna pattern, the reference pattern described in section 1.2.2.2.1 is to be used.

The reference radiation pattern for omnidirectional or sectoral antennas is the following:

$$G(\theta) = G_0 - 12 (\theta/\varphi_3)^2, \text{ dBi} \quad 0 \leq \theta < \varphi_3$$

$$G(\theta) = G_0 - 12 - 10 \log (\theta/\varphi_3), \text{ dBi} \quad \varphi_3 \leq \theta < 90^\circ$$

where:

G_0 = maximum gain in the horizontal plane (dBi)

θ is the radiation angle above the horizontal plane (degrees)

φ_3 (degrees) is given by:

$$\varphi_3 = \frac{1}{\alpha^2 - 0.818} \text{ degrees}$$

where:

$$\alpha = \frac{10^{0.1G_0} + 172.4}{191}$$

NOC 1.2.3 Determination of the need for coordination between MSS space stations (space-to-Earth) and terrestrial stations

MOD 1.2.3.1 Method for the determination of the need for coordination between MSS space stations (space-to-Earth) and other terrestrial services sharing the same frequency band in the 1 to 3 GHz range

Coordination of assignments for transmitting space stations of the mobile-satellite service with respect to terrestrial services is not required if the power flux-density produced at the Earth's surface or the fractional degradation in performance (FDP) of a station in the fixed service does not exceed the threshold values shown in the following table.

Frequency band (MHz)	Terrestrial service to be protected	Coordination threshold values				
		Geostationary space stations		Non-geostationary space stations		
		pfd (per space station) calculation factors (NOTE 2)		pfd (per space station) calculation factors (NOTE 2)		% FDP (in 1 MHz) (NOTE 1)
		<i>P</i>	<i>r</i> dB/deg	<i>P</i>	<i>r</i> dB/deg	
1 492 - 1 525	analogue FS telephony (NOTE 5)	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	
	all other cases (NOTE 4)	-128 dB(W/m ²) in 1 MHz	0.5	-128 dB(W/m ²) in 1 MHz	0.5	25
1 525 - 1 530	analogue FS telephony (NOTE 5)	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	
	all other cases	-128 dB(W/m ²) in 1 MHz	0.5	-128 dB(W/m ²) in 1 MHz	0.5	25
2 160 - 2 200 (NOTE 3)	analogue FS telephony (NOTE 5)	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	-141 dB(W/m ²) in 4 kHz and -123 dB(W/m ²) in 1 MHz (NOTE 6)	0.5	
	all other cases	-128 dB(W/m ²) in 1 MHz	0.5	-123 dB(W/m ²) in 1 MHz (NOTE 6)	0.5	25

Frequency band (MHz)	Terrestrial service to be protected	Coordination threshold values				
		Geostationary space stations		Non-geostationary space stations		
		pfd (per space station) calculation factors (NOTE 2)		pfd (per space station) calculation factors (NOTE 2)		% FDP (in 1 MHz) (NOTE 1)
		<i>P</i>	<i>r</i> dB/deg	<i>P</i>	<i>r</i> dB/deg	
2 483.5 - 2 500	all other cases	-128 dB(W/m ²) in 1 MHz and -146 dB(W/m ²) in 4 kHz		-126 dB(W/m ²) in 1 MHz and -144 dB(W/m ²) in 4 kHz (NOTE 7)	0.65	
2 500 - 2 520	analogue FS telephony (NOTE 5)	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	
	all other cases	-128 dB(W/m ²) in 1 MHz	0.5	-128 dB(W/m ²) in 1 MHz	0.5	25
2 520 - 2 535	analogue FS telephony (NOTE 5)	-154 dB(W/m ²) in 4 kHz and -136 dB(W/m ²) in 1 MHz	0.75	-146 dB(W/m ²) in 4 kHz and -128 dB(W/m ²) in 1 MHz	0.5	
	all other cases	-136 dB(W/m ²) in 1 MHz	0.75	-128 dB(W/m ²) in 1 MHz	0.5	25

NOTE 1 - The calculation of fractional degradation in performance (FDP) is contained in section 1.2.2.1, using the reference FS parameters contained in sections 1.2.2.2.1 and 1.2.2.2.3. The use of FDP threshold is limited to the case of digital FS systems.

NOTE 2 - The following formula should be used for deriving the coordination threshold in terms of power flux-density:

$$\begin{array}{ll} P & \text{for } 0^\circ \leq \delta \leq 5^\circ \\ P + r(\delta-5) & \text{for } 5^\circ < \delta \leq 25^\circ \\ P + 20r & \text{for } 25^\circ < \delta \leq 90^\circ \end{array}$$

where δ is the angle of arrival (degrees).

The threshold values are obtained under assumed free-space propagation conditions.

NOTE 3 - The coordination thresholds in the band 2 160 - 2 270 MHz (Region 2) and 2 170 - 2 200 MHz (all regions) to protect other terrestrial services do not apply to International Mobile Telecommunication-2000 (IMT-2000) systems, as the satellite and the terrestrial components are not intended to operate in the same area or on common frequencies within these bands.

NOTE 4 - Exceptions for the band 1 492 - 1 525 MHz are as follows:

4.1 For the land mobile service on the territory of Japan (No. S5.348A): -150 dB(W/m²) in 4 kHz at all angles of arrival is applicable to all satellite space-to-Earth emissions.

4.2 For the aeronautical mobile service for telemetry (No. S5.343), the requirement for coordination is determined by frequency overlap (No. S5.348).

NOTE 5 - In all cases involving sharing with analogue systems for telephony in the fixed service, further coordination is only required when the power flux-density values are greater than or equal to the coordination threshold values in both reference bandwidths.

NOTE 6 - The power flux-density values specified for the band 2 160 - 2 200 MHz provide full protection for analogue radio-relay systems using the sharing criteria established by Recommendation ITU-R SF.357, for operation with a non-GSO MSS system employing narrow-band TDMA/FDMA techniques.

NOTE 7 - The power flux-density values specified for the band 2 483.5 - 2 500 MHz provide full protection for analogue radio-relay systems using the sharing criteria established by Recommendation ITU-R SF.357, for operation with multiple non-GSO MSS systems employing CDMA techniques. The power flux-density values specified will not provide full protection for existing digital fixed systems in all cases. However, these power flux-density values are considered to provide adequate protection for digital fixed systems designed to operate in this band, where high-power ISM equipment and possible low-power applications are expected to produce a relatively high interference environment.

APPENDIX S13*

Distress and Safety Communications (Non-GMDSS)

(see Article S30)

PART A

* For the purposes of this Appendix, distress and safety communications include distress, urgency and safety calls and messages.

Part A1. General Provisions

- MOD** § 1. The provisions specified in this Appendix are obligatory (see Resolution 331 (Rev.WRC-97)) in the maritime mobile service for stations using the frequencies and techniques prescribed in this Appendix and for communications between these stations and aircraft stations. However, stations of the maritime mobile service, when additionally fitted with any of the equipment used by stations operating in conformity with the provisions specified in Chapter SVII shall, when using that equipment, comply with the appropriate provisions of that Chapter. The provisions of this Appendix are also applicable to the aeronautical mobile service except in the case of special arrangements between the governments concerned.
- NOC** § 2. to § 8.
- NOC** § 9.
- (MOD)** a) until the full implementation of the global maritime distress and safety system (GMDSS), of transmitting preferably class A2A or H2A and receiving preferably class A2A and H2A emissions on the carrier frequency 500 kHz or, on the carrier frequency 2 182 kHz, transmitting class J3E or H3E and receiving class A3E, J3E and H3E emissions¹ or, on the carrier frequency 4 125 kHz, transmitting and receiving J3E emissions or, on the frequency 156.8 MHz, transmitting and receiving class G3E emissions (see also Resolution 331 (Rev.WRC-97));
- NOC** § 9. b)

MOD § 10. All provisions of the Radio Regulations pertaining to the distress, urgency and safety communications using the techniques and frequencies described in this Appendix shall be maintained in force for all stations using these techniques and frequencies for distress, urgency and safety communications (see Resolution 331 (Rev.WRC-97)).

Part A2. Frequencies for Distress and Safety

Section I. Availability of Frequencies

C. 2 182 kHz

MOD § 2. (1) The carrier frequency 2 182 kHz is an international distress frequency for radiotelephony (see also Nos. S5.108 and S5.111); it shall be used for this purpose by ship, aircraft and survival craft stations and by emergency position-indicating radiobeacons using frequencies in the authorized bands between 1 605 kHz and 4 000 kHz when requesting assistance from the maritime services. It is used for distress calls and distress traffic, for signals of emergency position-indicating radiobeacons, for the urgency signal and urgency messages and for the safety signal. Safety messages shall be transmitted, where practicable, on a working frequency after a preliminary announcement on 2 182 kHz. The class of emission to be used for radiotelephony on the frequency 2 182 kHz shall be J3E. The class of emission to be used by emergency position-indicating radiobeacons shall be as specified in Appendix S19 (see also Part A5, paragraph 3). Distress traffic on 2 182 kHz following the reception of a distress call using digital selective calling should take into account that some shipping in the vicinity may not be able to receive this traffic (see also Appendix S15 and Resolution 331 (Rev.WRC-97)).

Section II. Protection of Distress and Safety Frequencies

B. 500 kHz

MOD § 15. (1) Apart from the transmissions authorized on 500 kHz, and taking account of No. S52.28, all transmissions on the frequencies included between 495 kHz and 505 kHz are forbidden. Until 1 February 1999, this applies to frequencies between 490 kHz and 510 kHz.

Section III. Watch on Distress Frequencies

A. 500 kHz

- (MOD)** § 19. (1) In order to increase the safety of life at sea and over the sea, all stations of the maritime mobile service normally keeping watch on frequencies in the authorized bands between 415 kHz and 526.5 kHz which employ Morse telegraphy shall, during their hours of service, take the necessary measures to ensure watch on the international distress frequency 500 kHz for three minutes twice an hour beginning at x h 15 and x h 45, Coordinated Universal Time (UTC), by an operator using headphones or loudspeaker (see also Resolution 331 (Rev.WRC-97)).
- NOC** § 19. (2)
- MOD** a) transmissions shall cease in the band between 490 kHz and 510 kHz. From 1 February 1999, this band is reduced to the band between 495 kHz and 505 kHz;
- ADD** § 20A. The provisions of paragraphs 19 to 20 remain mandatory until 1 February 1999.

B. 2 182 kHz

- MOD** § 21. (1) Coast stations which are open to public correspondence and which form an essential part of the coverage of the area for distress purposes using the techniques and frequencies described in this Appendix on 2 182 kHz should, during their hours of service, maintain a watch on 2 182 kHz (see also Resolution 331 (Rev.WRC-97)). Such watch should be indicated in the List of Coast Stations.
- MOD** (2) These stations should maintain this watch by means of an operator using some aural method, such as headphones, split headphones or loudspeaker.
- MOD** (3) In addition, ship stations should keep the maximum watch practicable on the carrier frequency 2 182 kHz for receiving by any appropriate means the radiotelephone alarm signal described in Part A5, paragraph 6(1), and the navigational warning signal described in Part A5, paragraphs 12(1), (2) and (3), as well as distress, urgency and safety signals. (See also Resolution 331 (Rev.WRC-97).)
- MOD** § 22. Ship stations open to public correspondence should, as far as possible during their hours of service, keep watch on 2 182 kHz (see also Resolution 331 (Rev.WRC-97)).

- MOD** § 23. In order to increase the safety of life at sea and over the sea, all stations of the maritime mobile service normally keeping watch on frequencies in the authorized bands between 1 605 kHz and 2 850 kHz using the techniques described in this Appendix for distress purposes, should during their hours of service, and as far as possible, take steps to keep watch on the international distress carrier frequency 2 182 kHz for three minutes twice each hour beginning at x h 00 and x h 30, Coordinated Universal Time (UTC) (see also Resolution 331 (Rev.WRC-97)). Such watch, in the case of coast stations, should be indicated in the List of Coast Stations.
- ADD** § 23B The provisions of paragraphs 21 to 23A remain mandatory until 1 February 1999.
- MOD** C. 4 125 kHz, 6 215 kHz, 8 291 kHz, 12 290 kHz and 16 420 kHz
- MOD** § 24. (1) All coast stations which are open to public correspondence and which form an essential part of the coverage of the area for distress purposes may, during their hours of service, maintain a watch on the carrier frequencies 4 125 kHz, 6 215 kHz, 8 291 kHz, 12 290 kHz and 16 420 kHz (see paragraphs 4(1) and 6 above, as well as Table S15.1 of Appendix S15). Such watch should be indicated in the List of Coast Stations.
- D. 156.8 MHz*
- MOD** § 25. (1) A coast station providing an international maritime mobile radiotelephone service in the band 156 - 174 MHz and which forms an essential part of the coverage of the area for distress purposes using the techniques and frequencies described in this Appendix should, during its working hours in that band, maintain an efficient aural watch on 156.8 MHz (see also Resolution 331 (Rev.WRC-97)). Such watch should be indicated in the List of Coast Stations.
- MOD** (2) Ship stations should, where practicable, maintain watch on 156.8 MHz when within the service area of a coast station providing international maritime mobile radiotelephone service in the band 156 - 174 MHz, using the techniques and frequencies described in this Appendix. Ship stations fitted only with radiotelephone equipment operating in the authorized bands between 156 MHz and 174 MHz, should maintain watch on 156.8 MHz when at sea (see also Resolution 331 (Rev.WRC-97)).